WTCI-618-P

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THE PORT AUTHORITY OF NY & NJ

Asbestos Memorandum

To: Dr. B. Schuman, Mr. P. Maurer
From: Robert J. Linn
Date: June 7, 1983
Subject: WTC - PROPOSED PROTECTION PROCEDURES IN ASBESTOS AREAS
Reference:
Copy To: D. Censullo, L. Feld, F. DiPaolo - all w/att.

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Pursuant to my informal meeting with both the Law Department and the Medical Department, I am enclosing a copy of a memorandum, Hofmann to Linn, dated 6/7/83, in which the last two pages establishes a "Proposed Protection Procedure When Working In Ceiling Plenum Areas" that contain asbestos. I would appreciate you reviewing and advising me of any additions or deletions you feel are necessary. My plan is to make this two page document available to both Port Authority employees working in the area and WTC maintenance contractors who have staff that periodically work in these areas.

I am also for your general information enclosing a copy of Schedule "E" which is presented to the contractor who is doing tenant alterations in areas containing asbestos.

Robert J. Linn
Deputy Director for
Physical Facilities
World Trade Department

Atts.

/ed

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PLAINTIFF'S EXHIBIT PX-605

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THE PORT AUTHORITY OF NY & NJ Memorandum

To: Robert J. Linn, Deputy Director For Physical Facilities
From: John L. Hofmann World Trade Department
Date: June 7,1983
Subject: ONE WORLD TRADE CENTER - ENVIRONMENTAL TECHNOLOGY REPORT REVIEW
Reference: Memo, R. Linn to J. Hofmann, dated 4/28/83,same subject

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Copy To:
H. Barr, D. Censullo, W. Connell, F. DiPaolo, L. Feld, J. Navas, C. Vasquez

Pursuant to the reference, we have reviewed the subject report and have the following comments:

1. The report agrees with our previous observations that the spray-on fireproof material is moderately friable, that the spray-on fireproof material contains asbestos fibers, and that construction spaces must be adequately cleaned prior to occupancy by tenant personnel. The report concurs with our conclusion that removal is not necessary at this time. The Risk Management Division's (RMD) monitoring program continues to support this conclusion.

2. Asbestos sample analysis by polarized light microscopy is also used by RMD and is a standard NIOSH procedure for indentifying asbestos fibers. RMD has similarily indentified that the spray-on fireproofing on the 24th and 25th floors of One World Trade Center contains asbestos material.

3. The report indicates that air sampling will commonly fail to adequately describe the true contamination potential by reentrainment unless performed at the time of disturbance. Air sampling by RMD is conducted while work is being performed. Therefore, the true contamination potential in an area is adequately described within the limits of the standard test procedure as developed by the National Institute of Occupational Safety and Health.

4. Schedule "E" sets forth conditions which prohibit cross contamination of tenant occupied areas from other construction areas. Further to this, the report agrees with our previous analysis that contamination via the HVAC system is considered remote. If large scale removal of spray-on fireproofing is required, the conditions should be evulated on an individual basis and appropriate protective measures instituted.

5. We believe that Schedule "E" is adequate and because it is part of a contract, it is enforceable by Port Authority inspectors who assure that there is full compliance.

6. The contamination limit in Schedule "E" of 1.0 fiber per cubic centimeter is one-half of the limit set by the Occupational

Safety and Health Act (OSHA 1910.100—) for the workplace. The limit of 0.1 fiber per cubic centimeter is an opinion or suggested limit by others considering exposure limits. Nevertheless, RMD air sample test results both in construction areas and in adjacent tenant areas while construction work was in progress, show that atmospheres have always been well within OSHA requirements. We recommend that air sampling continue as indicated in Schedule "E" and that federal limits remain as our level of compliance. Presently, there appears to be no reason to establish more restrictive limits. The World Trade Center, except for areas of assembly or similar public areas, is a work place and as such, the requirement of 2 fibers per c.c. applies. However, we recognize that there is a proposed rulemaking by OSHA to lower the limit to 0.5 fiber per c.c. Our air sample tests, approximately 300 of them, show two isolated results of 0.96 fiber per c.c. and all the remaining results do not exceed 0.2 fibers per c.c.

7. The use of the high efficiency particulate absolute (HEPA) vacuum equipment as required in Schedule "E" for cleaning, prior to tenant occupancy of a completed construction area, is in agreement with the report's recommended procedures. Wet mop and wet dusting are also applicable and should be implemented only as a support procedure to vacuuming.

8. Although the spray-on fireproofing is removed or disturbed during construction, repair of the areas, prior to installation of the hung ceiling, reseals the disturbed edges of the remaining fireproofing. However, until the repair work is completed, isolation drapes and precautions should remain in force.

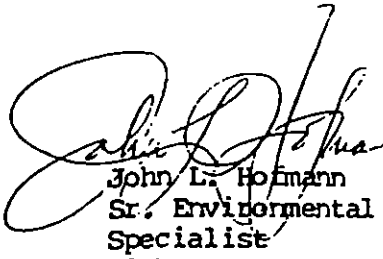
9. The hung ceiling throughout all tenant areas protects the fireproofing from casual damage. In addition, our monitoring program shows that the plenum atmosphere is well within OSHA requirements of 2 fibers per cc. Yearly test results indicate that within test limits there has been no increase in the fibers per cc count which can result because of air shear.

Schedule "E" requirements were developed with the premise that they were for inclusion in tenant alteration contracts for areas not occupied by tenant personnel when work was in progress. Therefore, it is recommended that the following requirement be added to Schedule "E": "Prior to occupancy by tenant personnel, the contractor shall clean up the construction area and vacuum the floor and wall surfaces using the high efficiency particulate vacuum cleaner. To assist the vacuuming procedure, a damp mop and damp dusting of all surfaces may be carried out prior to vacuuming." In addition, a new paragraph should be added which requires the contractor to submit for Port Authority approval plans and procedures indicating the methods they will provide to comply with Schedule "E". This should include locations of air lock areas, access and egress from the isolated areas, sequence of operations etc.

It is noted in Schedule "E" Item 1 that the first word of the second paragraph, "sufficient", is not defineable. Therefore we recommend that the word sufficient be deleted and the sentence read as follows: "Tests shall be taken as directed by the Engineer during each ....etc."

In response to your request concerning maintenance work in the plenum or maintenance work which requires the removal of ceiling tiles, we have attached a working document for your guidance.

If you have any questions concerning our comments or the attached, we will be happy to discuss them with you.



John L. Hofmann
Sr. Environmental Protection Specialist
Risk Management Division

PROSPOSED PROTECTION PROCEDURE WHEN WORKING IN CEILING PLENUM AREAS

When working in One World Trade Center, Zone I in the plenum areas under the conditions indicated herein, it is recommended that:

Condition I — Light Maintenance Work - which requires the removal of one or two ceiling tiles and does not require the removal or disturbance of spray-on fireproofing.

a. Personnel shall wear respiratory protection (NIOSH approved for asbestos), gloves and eye protection.

b. Removed ceiling tile(s) shall be damp dusted on the plenum side immediately after removal.

c. Upon completion of work, restore the ceiling tile(s).

Condition II — Moderate Maintenance Work - which requires the removal of one or two ceiling tiles, a minor amount of spray-on fireproofing removal and/or disturbance and work above the hung ceiling only. All vacuuming shall be performed with a high efficiency particulate absolute (HEPA) vacuum with a 0.3 micron filter.

a. Personnel shall wear respiratory protection (NIOSH approved for asbestos), gloves, eye protection and disposable protective clothing.

b. Protective plastic sheeting shall be spread on the floor or over furniture located under the opened ceiling area.

c. Removed ceiling tile(s) shall be damp dusted or vacuumed on the plenum side immediately after removal.

d. Dampen any spray-on fireproofing prior to removal and place all removed or loosened fireproofing material in plastic bags. Patch the spray-on fireproofing as required with non-asbestos fireproofing to restore structural fire protection integrity.

e. Upon completion of the work, restore the ceiling tile(s), carefully pick up the protective plastic sheets to avoid the spread of dust or fibers and place in plastic bags for proper disposal. Any areas which exhibit dust because of the work should be thoroughly vacuumed.

f. Place all disposable protective clothing and other contaminated materials in plastic bags and seal for proper disposal.

Condition III — Extensive Maintenance Work - which requires the removal of more than two ceiling tiles, some light construction including relocation of building components, removal and/or disturbance of spray-on fireproofing, and work above and below the hung ceiling. All vacuuming is to be performed with a HEPA unit.

a. Same as Condition II

b. Isolate the work area with plastic sheeting and establish a vestibule entrance to the work area to assure isolation and containment. Office personnel shall not occupy the isolated area until work is completed unless the area is cleaned prior to each occupancy as indicated in paragraph "f" hereinafter.

c. Removed ceiling tiles shall be damp dusted or vacuumed on the plenum side prior to removal (excepting the first tile) and stored with a protective covering until replacement.

d. All Dislodged asbestos material (pieces) shall be promptly vacuumed to avoid further break-up and disbursement. Patch damaged spray-on fireproofing as required with non-asbestos fireproofing.

e. During work performance, conduct air sampling tests within and outside of the work area to assure that the atmosphere is in conformance with fiber limitations as established by code. If air sampling results indicate an excess of one (1) fiber per cubic centimeter, the work shall be stopped and procedures taken to decontaminate the area and reduce the fiber count to an acceptable level during work performance.

f. Upon completion of the work, completely vacuum the work area and any additional areas where dust is evident because of the work. Carefully remove all plastic protection and together with all other contaminated material place in plastic bags and seal for proper disposal.

It is recommended that all personnel wear respiratory protection (NIOSH approved for asbestos) while in areas with the aforementioned conditions. Depending on local conditions gloves, protective clothing and/or eye protection, should also be worn.

SCHEDULE "E"

All work in connection with ceiling tile removal and replacement and all other work conducted within any ceiling plenum space (other than that related to removal and stripping of asbestos which shall be governed by other standards) shall be subject to the following rules and regulations:

1) Prior to commencing work, the Contractor shall arrange with an independent commercial laboratory, which shall be approved by the Port Authority, to provide qualified air monitoring technicians (s) with approved equipment to measure, while such work is in progress, the airborne concentration of asbestos fibers, using an 8-hour, time-weighted average (TWA) and the membrane filter method with phase contrast optical microscopy (NIOSH Method), all in accordance with applicable regulations of the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, contained in Title 29, Code of Federal Regulations, Part 1910.

   Sufficient tests shall be taken in conformance with OSHA sampling strategy during each work shift to establish a cross-section of the fiber concentration at each area of work activity at the most critical elevation during all phases of construction commencing at the beginning of ceiling removal and concluding with final cleanup after replacement of ceiling.

   At the end of each work shift, the technician in charge will arrange for the exposed filters to be properly packaged, sealed and delivered, to the approved laboratory. He will also assure that the filters will be handled carefully at all times so as to minimize dislodging of fibers from the filters. The laboratory will examine the filters and report at the beginning of the next shift, by telephone, to the Port Authority inspector as to whether or not a limit of one (1) fiber per CM^3 has been exceeded. A written report, signed by the responsible laboratory official, shall be returned within 24 hours of the telephone report to the office of the Port Authority's WTC Construction Manager who will retain the copy for Port Authority files.

2). Work in these areas shall only be performed when the premises are not occupied except for authorized Contract and Port Authority personnel. The areas shall be isolated from other occupied areas. Work in public areas will be performed during other than normal working hours and access by the public will be prevented by appropriate barricades. Before starting work in tenant areas, the Contractor shall create a vestibule at each entrance by hanging polyethylene sheets from the ceiling with 18" overlaps to form a dust proof barrier.

3) All other requirements of OSHA and the EPA, as well as other authorities having jurisdiction, shall be complied with as if the Port Authority were a private corporation.

PORT AUTHORITY

4) Wherever any asbestos material is dislodged, it shall be vacuumed immediately with a high efficiency (0.3 micron exhaust filter) particulate vacuum cleaner (Nilfisk Vacuum Cleaner or equal) and the dislodged fireproofing material will be replaced with a troweled Blaze Shield D-C/F (U. S. Gypsum) or Zonolite Mono-Kote (W. R. Grace).

5) If the laboratory phone reports are below one (1) fiber per CM^3, the work may continue. If reports, in the opinion of the Port Authority inspector, show an inclination of increase in quantity of airborne fibers, the Contractor shall alter his work procedures exercising additional care until such increases cease.

6) If a phone report from the laboratory shows an average fiber count of one (1) fiber per CM^3 or a single reading of five (5) fibers per CM^3, the Port Authority inspector will stop all work. The Contractor will then revise his procedures to the satisfaction of the Engineer so that they result in a reduction in the amount of airborne fibers.

In the event that the Contractor cannot reduce the airborne fiber amount to one (1) fiber per CM^3, all work will stop and additional rules and regulations will be promulgated by the Port Authority as required by the circumstances encountered.

7) Typical procedures which may be required to reduce airborner fiber density are as follows:

a) Vacuum the entire area with the above specified vacuum cleaner.

b) Place removed tiles or other debris in containers more carefully.

c) Wet tops of tiles before removal.

d) Cover all horizontal surfaces with disposable drop cloths.

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